

MENA means business



Credit: First Solar

Market overview | A number of false dawns have so far prevented solar from living up to its full potential in the Middle East and North Africa. But as Danielle Ola reports, with all the right ingredients in place, and an increasingly competitive business environment, the prospects in the region look better than ever before

The Middle East and North Africa (MENA) region has been the next big solar market for a very long time but never seems to quite make it. Despite confidence in power demand and in the solar resource, questions over financing and political risk remain. The differing energy demand requirements, economic status and generation capacities found across the region mean the prospects for clean energy potential in the Middle East are far from uniform.

However, as oil prices worldwide plummet alongside the cost of renewable energy technologies, the latter are poised to play a significant role as a cost-competitive alternative to conventional power. Indeed the first sign of things to come are already well in evidence, with solar already starting to play an increasingly important role in Jordan, Morocco and the UAE. Potentially the region's biggest solar market, Saudi Arabia, has started to show signs of life, while across the Red Sea in Egypt there is optimism that recent political hurdles can be overcome to reignite what at the outset looked like a very promising new solar market.

This article looks at some of the dynamics shaping the fortunes of solar in the MENA region and its prospects in a part of the

world where it arguably makes most sense.

Stop-start Saudi

Saudi Arabia is at the centre of the region's plans to become a renewable energy heavyweight. Despite having first outlined plans for a renewable energy transition back in 2010, Saudi has faced severe delays in implementation.

The King Abdullah City for Atomic and Renewable Energy (KA CARE) procurement programme was launched in 2010. The original target of 41GW of solar energy was less than successful and subsequently pushed back. The reasons for the failure of the programme are still debated, but possible explanations include a lack of competitiveness against heavily subsidised conventional power and a lack of government implementation. "There was no clear responsibility and clear authority in one place for the programme and it kind of just fell apart with all the different centres of power," says James Kurz, senior consultant at Apricum - The Cleantech Advisory.

Chris Ehlers, newly installed CEO of Saudi-based ACWA Power's renewable energy division ACWA Power RenewCo, agrees that the false start could be down to a lack of coordination from stakeholders: "We must not forget that these are huge programmes

Record-low bids are one reason for optimism over solar's prospects in the MENA region

that are being rolled out and that there are a variety of stakeholders involved. It is also part of a transition from the historical form of providing energy and shifting the focus to renewables. That is a huge transition for any country."

However, in late April of this year, the Saudi government approved the 'Saudi Vision 2030', a concerted attempt to reduce the kingdom's reliance on oil and transition into a clean energy future. Vision 2030 is a complete economic overhaul as well as an ideological one, with wide-ranging economic diversification and designs to rein in government spending. Specifically, for the renewable energy sector, it sends out a long-anticipated signal to developers and other industry stakeholders that Saudi's 'sleeping giant' is finally awake.

"Obviously we had a bit of a false start but it now looks like things are finally moving," says Mhairi Garcia, vice chair of the Clean Energy Business Council and energy counsel at law firm Ashurst. "Everyone is quite excited about Saudi."

Whilst no specific mandates have been set for wind and solar procurement, the 'initial' target of 9.5GW of renewable energy by 2023 is much more definitive than the previous 'wait and see' approach to renewables that Saudi has taken so far.

In addition to this commitment, a recent and radical Saudi government reshuffle under the 'King Salman Renewable Energy Initiative' adds new legal and regulatory frameworks for the deployment of renewables. In May 2016, oil minister Al-Naimi was replaced by Khalid Al-Falih, who was made the head of the new ministry of energy, industry and mineral resources, which now assumes sole responsibility for electricity.

Garcia believes that this new government focus is its own driver for renewables deployment in Saudi: "Now I think there is a real commitment from the ministerial level in Saudi to move things along; obviously they've got their own drivers in terms of oil price and so on, but that will be what gets things off the ground."

Nevertheless, although the Saudi Electric Company has begun with a request for proposals for the upcoming tender, no other plans for long-term procurement are in place, causing Apricum to forecast an outlook of 'uncertainty' for the region.

"[Saudi] has not clarified a framework for development, whether that will be larger tenders done by SEC or whether Saudi Aramco will be involved somehow," says Apricum's Kurz. "What about KA-Care: does it still have some role to play in renewable energy development? It's not exactly clear yet. We know that the major players are trying to decide on what the framework will look like, but there is some risk that agreement is delayed or it could be that what they decide is smaller than expected."

"But we expect that by 2020, this will be a PV market that will be installing between 500, 600MW-1GW."

Jordan

Saudi could learn from the model in Jordan, where generating capacity is expanding. Despite relying on imports for around 95% of its energy needs, Jordan's lack of conventional energy resources means that there is a clear opportunity for renewables. While it is not the most politically secure region, it has mandated a very clear commitment for renewables with the government's tailor-made renewable programme.

"It is in a sense really leading the region because it has a regime in place; it has a renewables slot and it has a price list and its third round of tendered projects has been announced," says Garcia. "It is not doing projects in the same scale necessarily as in Dubai and Abu Dhabi. But there is that real commitment and because there is a real need for [renewables] as part of their energy mix, diversification is a key requirement."

Jordan holds targets of 1.8GW of wind and solar by 2018, with a promising pipeline of projects already underway to achieve this. Direct proposal submissions have just opened for the third round of tenders for 200MW of PV and 100MW of wind.

Despite being limited in size and experiencing higher electricity prices than most countries in the MENA region, Jordan has nonetheless made an opportunity for development. "The fact the projects are smaller means more private developers could come in, despite trying to get them to take a bit more risk perhaps, as has been the case in conventional independent power projects. It's quicker to get 20MW or 50MW up and running, rather than 800MW," says Garcia.

Jordan has also proved a resilient player, overcoming its electricity network's struggles to support bidder appetite for renewables. "Everybody wanted to build a solar project in Jordan but the network kind of prevented it," says Keith Bullen, senior legal consultant at DLA Piper's F&P team in Dubai. "They fixed that through the Green Corridor and will soon be supplementing that with a very robust transmission line that will be able to support renewable projects close to it."

Egypt

Less of a role model for the region is Egypt, whose tumultuous energy sector has been buffeted by political and social turbulence. Now that the climate has settled down, the need for a stable and secure power supply is on the books, with solar and wind power expected to be instrumental in creating this.

Tahboub believes that for Egypt to repair its internal damage, the country should reach to external sources: "Government stakeholders need to revise their plans and put in place a more sustainable mechanism to invite international developers to come in, invest and develop green energy."

It may however not be that straightforward, as Egypt's energy sector currently faces two significant barriers: one pertaining to currency and the other to dispute resolution with the government insisting on local arbitration.

The arbitration issue was triggered by competition elsewhere in the region. The original Egyptian 4.3GW FIT programme began at a relatively high price of US\$0.014/kWh for 20-50MW PV projects. This price was in stark contrast to the competitive bids happening elsewhere in the likes of Jordan, Abu Dhabi and Morocco.

"The Egyptian government was like, wow, why are we paying two or three times

the price in Egypt? So they put in additional clauses to the PPA that would basically make it almost impossible to finance these projects – the local arbitration rule," explains Kurz. "The requirements also stipulate that 85% of the financing be from international sources. The whole idea was that they would push these projects with this higher PPA to another round with a lower FIT rate so that they could save on costs. Of course, that is doing huge damage to the Egyptian government's credibility."

Kurz estimates that of the 2GW from the first round, representing 40 projects, around 10 of those found a PPA. "But as for how many of those 10 projects actually get built – I don't think it will be all of them. In our assumptions we think about half of them have a chance, so that would be about 150-200MW," he adds.

MESIA takes the view that a "low percentage" of the original tender will get built, with the onus falling on developers to engage with the government to get through the issue. ACWA Power, however, remains optimistic – particularly since a second phase of tenders was announced 28 October at a price of US\$0.0840/kWh with a 30% and 40% local content requirement for solar and wind projects respectively.

Indeed, Egypt is home to the second-largest economy in Africa, creating a high demand for energy. The content requirement offers opportunities for both local and international companies, and the new incentive structures give Egypt the chance to redress its former discretions. Moving forward, the Egyptian energy ministry has outlined three options for participants: to carry on with Phase 1 of the original tender, transition to Phase 2 or to withdraw completely and recover costs paid through the Cost Sharing Agreement.

Finance

The MENA region is characterised by some of the lowest tariff prices globally for solar PV projects. The Abu Dhabi Water and Electricity Authority (ADWEA) received what are said to be the lowest bids ever for solar PV, for its 350MW Sweihan plant. Coming in at just US\$0.0242/kWh, JinkoSolar and Japanese conglomerate Marubeni Corporation submitted the lowest bid – even lower than the bids in Dubai that were at the time hailed as the lowest tariffs ever received.

"What we have seen in Dubai and Abu Dhabi are factors coming together," says Ehlers. "Obviously, these are factors that cannot be replicated in each and every country; however, there is potential to scale

if demand is there, so I don't see a reason why other markets cannot be on a similar – I'm not saying on a lower or the same – but on a similar level."

The question remains whether it is feasible for similar prices to be replicated in other countries, given unique market dynamics and differing drivers. For example, PV in Saudi is not the same as PV in the UAE; each has differing climatic conditions and solar irradiation which will determine whether one achieves a more favourable price. Secondly, the confidence of banks in that particular jurisdiction will determine how cheap financing can be. That being said, Apricum's Kurz believes the adjusted levelised costs of energy renders prices incommensurable regardless:

"There's a bit of a misconception with the Abu Dhabi tender. What came out in the press is this 2.4 cents/kWh figure and everyone is saying this is an all-time record. But this is not an adjusted levelised cost of energy. Unadjusted, it was around the same as the Dubai bid. The way it was adjusted gave 60% higher value to all energy generated during the summer months, which actually reduced the LCOE by about 20% if you take the whole year into account."

Sustainable pricing?

What can be agreed is that the region as a whole is experiencing favourable pricing conditions. Even Egypt, for all its political woes, experienced a price drop to US\$0.078/kWh from US\$0.136/kWh for 500kW-20MW projects and from US\$0.14/kWh to US\$0.084/kWh for 20-50MW projects under its FIT.

The low prices are not questioned, but the sustainability of such prices is. In fact, in the summer several developers including Enel Green Power, ACWA Power and ALJ pulled out of the bidding for Dubai's 350MW solar tender due to the fear of prices plummeting to new lows.

This begs the question whether such prices are feasible for reliable execution. The general consensus, despite the risk, appears to be that they are.

"Yes they can be – as evidenced by what is going on in Abu Dhabi and what is going on in Dubai," says Garcia. "That has of course brought increased pressure on the banks and EPC contractors to come up with lower prices."

Input of commercial banks and government authorities also has a lot to do with whether certain prices are feasible in certain regions. For example, security and diversification are at the forefront of driving

Morocco, MENA's unsung hero

While the focus is on solar's prospects in the big economies of Saudi, Egypt and the UAE, there is the opinion that Morocco is quietly blazing a trail for the rest to follow.

"Morocco clearly is one of the early starters," says CEBC's Mhairi Garcia. "It was one of the first countries to push forward on solar farms and has of course been a leader on CSP. Now it's got PV projects and wind projects. It's got a lot of ambition."

Morocco has a target of 2GW of solar by 2020 and has recently chosen a consortium to build the 170MW Noor PV I scheme, representing its first significant PV deployment. As has been the case elsewhere in the region, Morocco has seen some competitive pricing for PV, with the winning bid for Noor coming at around US\$0.06/kWh.

"Morocco is really taking the lead not only on renewables from a programme implementation and speed point of view but also from the solar part of it. We have seen now in the past that these programmes having specified CSP and then specified PV, but that is going to change in the future and I see Morocco driving that and complementing both technologies," says Chris Ehlers of ACWA Power, which is leading the Noor PV I consortium.



Already a leader in CSP, Morocco is now beginning to embrace utility-scale PV

Jordan's market, so it has garnered the support of the likes of the IFC and the EBRD. On the other hand, the UAE has the support of its off-takers, making low-priced projects feasible.

"In Dubai the mandated minimum return on a project was set at 10% and in Abu Dhabi it was set at 7% so DEWA was already investing 50% in the project and ADWEA was also investing 60% in their projects," says Kurz. "7% is not a super high return, but the project should be profitable based on what the bidders are proposing."

Subsidies (or lack of)

Something a lot of the MENA countries do have in common are subsidies for conventional sources of power such as oil and natural gas. There is however a movement spreading across the region for the phasing out of such subsidies, which would be an additional driver for renewables. "It makes it more transparent to see how competitive renewables are directly compared with

conventional power," says Ehlers.

"It's quite a sensitive issue because [phasing out subsidies] in turn pushes up the cost of power for commercial and private usage, but the upshot is that conventional energy has been subsidised for years, which makes it very difficult for renewables to compete," agrees Garcia, who also feels this movement could open a converse question of whether all renewables can indeed compete or whether some in fact need subsidising.

Notwithstanding, Abu Dhabi and Dubai achieved US\$0.03/kWh or less for PV. So it is undeniable that PV is extremely competitive – even without subsidy. In fact, all countries in the MENA region have at one point or another proved their competitiveness for PV and other renewable technologies, including wind and CSP. Although the financial and political situation remains vastly varied, the common thread remains that a region once dominated by oil is becoming famous for a very different type of energy. ■